

Application No. 09/897,221
Response to Office Action

Customer No. 01933

Listing of Claims:

1. (Currently Amended) A learning type image classification apparatus which ~~is capable of classifying~~ classifies a plurality of images ~~on using~~ a predetermined reference, said apparatus comprising:

5 a region clipping mode selection section which ~~is capable of selecting~~ selects a mode of clipping a region from the an image ~~regions~~ out of a plurality of candidates for clipping; and

a region clipping execution section for clipping ~~regions~~ the region from the ~~images in a~~ image in the mode selected by the

10 region clipping mode selection section.

2. (Original) The learning type image classification apparatus according to claim 1, wherein the apparatus is operated at least at a learning step and at a classification step after learning, and the region clipping mode selection section and the
5 region clipping execution section are operated at the learning step.

3. (Original) The learning type image classification apparatus according to claim 1, wherein the candidates of image clipping mode include a mode of automatically dividing the image into a plurality of regions by using a change in color and

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5 luminance value and clipping from the image a region obtained by integrating regions selected from a plurality of these divided regions.

4. (Original) The learning type image classification apparatus according to claim 1, wherein the candidates of the mode of clipping the image include a mode of clipping a region by using the learned category.

5. (Original) The learning type image classification apparatus according to claim 4, wherein the mode of clipping the region judges the reliability of the region clipping by using the learned category.

6. (Original) The learning type image classification apparatus according to claim 4, wherein the mode of clipping the region counts the number of clipped regions by using the learned category, and the image having a region number of 1 is extracted
5 as an image learning.

7. (Original) The learning type image classification apparatus according to claim 1, wherein the region clipping mode displays the result of the region clipping and the operator can

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make a selection as to whether the result of the region clipped
5 is to be adopted.

8. (Currently Amended) A learning type image classification
method which ~~is capable of classifying~~ classifies a plurality of
images on a predetermined reference, said method comprising ~~the~~
~~steps of:~~

5 selecting a mode of clipping a region from ~~the~~ an image ~~from~~
out of a plurality of candidates for the mode of clipping; and
clipping ~~a~~ the region from the image in the selected mode.

9. (Original) A recording medium in which a processing
program is recorded for classifying a plurality of images on a
predetermined reference with a computer, the processing program
comprising:

5 a first program providing a computer with a mode of clipping
a region from the image selected from a plurality of candidates;
and

a second program allowing the computer to clip a region from
the image in the clipping mode,

10 wherein the first program and the second program constitute
a learning type image classification program.

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10. (Currently Amended) A learning type image
classification apparatus ~~provide~~ provided with a learning step
and a classification step after learning for classifying a
plurality of images or automatically adding key words for
5 retrieval to images, the apparatus comprising:

a learning step execution section for executing the learning
step;

a classification step execution section after learning for
executing the classification step after learning; and

10 a region clipping mode selection section provided with a
plurality of region clipping modes, the section being capable of
selecting several modes out of the plurality of the modes.

11. (Original) The learning type image classification
apparatus according to claim 10, wherein the region clipping mode
comprises a semi-automatic region clipping mode, a learning usage
region clipping mode, and a interactive type region clipping
5 mode.

12. (Original) The learning type image classification
apparatus according to claim 11, wherein the semi-automatic
region clipping mode comprises a region dividing section for
automatically dividing the image into several regions by using
5 the change in the color and luminance in the image;

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a region designation section which is capable of designating a classification object region out of the regions divided at the region dividing section; and

10 a region integration section for integrating the region designated with the region designation section to set the region as the clipped region.

13. (Original) The learning type image classification apparatus according to claim 11, wherein the learning usage region clipping mode comprises:

5 a section for defining a region relationship between a category which has been learned and a category which is being learned; and

a region clipping execution section by the category which has been learned for executing the region clipping by the category which has been learned.

14. (Original) The learning type image classification apparatus according to claim 11, wherein the interactive type region clipping mode comprises:

5 a section for defining a region relationship between a category which has been learned and a category which is being learned;

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a region clipping execution section by the category which has been learned for executing region clipping by the category which has been learned;

10 a region clipping result display section; and
a judging section for judging the adoption of the region clipping.

15. (Original) The image classification apparatus according to claim 11, wherein, the learning usage region clipping mode further comprises a reliability judging section for judging the reliability of a region clipping wherein the system judges the
5 reliability of the region clipping by the category which has been learned.

16. (Original) The image classification apparatus according to claim 11, wherein the learning usage clipping mode further comprises:

5 a region number counting section for counting the number of regions of the result of the region clipping by the category which has been learned; and

a learning image candidate selection section in which an image in which the number of regions is counted 1 is set as a candidate of the learning image.

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17. (Currently Amended) A learning type image classification apparatus which ~~is capable of classifying~~ classifies a plurality of images, ~~the said~~ apparatus comprising:

5 a region clipping mode selection section which is capable of
~~selecting~~ selects a mode of clipping a region from ~~images from an~~
image out of a plurality of candidates for clipping; and

a region clipping execution section for clipping ~~a the~~
region from ~~images the image in a the~~ mode selected ~~with by~~ the
region clipping mode selection section.

18. (New) The learning type image classification apparatus according to claim 1, wherein a feature of the region is extract for classifying an image including the region.

19. (New) The learning type image classification method according to claim 8, further comprising extracting a feature of the region for classifying an image including the region.

20. (New) The learning type image classification medium according to claim 9, wherein a feature of the region is extracted for classifying an image including the region.

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21. (New) The learning type image classification apparatus according to claim 10, wherein a feature of the region is extracted for classifying an image including the region.

22. (New) the learning type image classification apparatus according to claim 17, wherein a feature of the region is extracted for classifying an image including the region.